

CPC**COOPERATIVE PATENT CLASSIFICATION****G04D**

APPARATUS OR TOOLS SPECIALLY DESIGNED FOR MAKING OR MAINTAINING CLOCKS OR WATCHES (machine tools in general [B23](#), [B24](#); hand tools in general [B25](#))

G04D 1/00

Gripping, holding, or supporting devices {stands in general [F16M](#); for instruments [G01D 11/30](#), [B01L](#)}

- G04D 1/0007 . {for assembly entirely by hand}
- G04D 1/0014 .. {Workbenches, supports; Workbenches provided with suction devices; for dust; Illumination}
- G04D 1/0021 .. {Supporting means facilitating assembly and mechanisation, e.g. magazines for components (machines for assembly [G04D 1/0071](#); supports in general [G04D 1/06](#))}
- G04D 1/0028 .. {Screwdrivers (screwdrivers in general [B25B 15/00](#))}
- G04D 1/0035 ... {with power source for driving the screwdriver}
- G04D 1/0042 .. {tools for setting, riveting or pressing, e.g. nippers for this purpose (machines therefor [G04D 3/042](#), [G04D 3/045](#), [G04D 3/047](#))}

- G04D 1/005 . {for non-automatic assembly, with automatic transport between workbenches}
- G04D 1/0057 .. { Conveyor belts or chains (in general [B65G](#))}
- G04D 1/0064 .. { Turntables or plates (carousels)(in general [B65G 47/00](#))}

- G04D 1/0071 . {for totally automated assembly}

- G04D 1/0078 . {Automated gripping means (hand-operated gripping means [G04D 1/02](#))}
- G04D 1/0085 .. {with pneumatic holding means (hand tools with pneumatic means [G04D 1/02](#))}

- G04D 1/0092 . {Devices for positioning and sorting of the components (sorting and positioning in general [B23Q](#))}

- G04D 1/02 . Tweezers; Vice clamps or other special hand tools for watchmakers {[G04D 1/04](#), [G04D 1/08](#), [G04D 1/10](#) take precedence; vices [B25B](#); devices for setting bearing jewels and parts thereof [G04D 3/04](#); devices for setting watch glasses [G04D 3/06](#)}
- G04D 1/021 .. {Tweezers (tweezers for medical purposes [A61B](#); setting tools [B41B 1/00](#))}
- G04D 1/022 .. {Universal nippers (nippers for setting watch glasses [G04D 3/067](#))}
- G04D 1/023 .. {Revolving-head nippers (jaw plates for latches [G04D 3/0218](#))}
- G04D 1/025 .. {Hand screws}
- G04D 1/026 .. {Clamps for holding bearing jewels (machines for setting bearing jewels [G04D 3/0002](#))}
- G04D 1/027 .. {Hand tools for gripping or holding by magnetic means}
- G04D 1/028 .. {Hand tools for gripping or holding by pneumatic means}

- G04D 1/04 . Tools for setting springs]

- G04D 1/041 .. {for springs of driving mechanisms (machines therefor [G04D 3/0007](#))}
- G04D 1/042 .. {for coil springs in regulating mechanisms (machines therefor [G04D 3/0041](#))}
- G04D 1/044 ... {for working the ends (machines therefor [G04D 3/0041](#))}
- G04D 1/045 ... {for fastening the ends (machines therefor **G04D 3/00B2K**, [G04D 3/0041](#))}
- G04D 1/047 {on the coil roll}
- G04D 1/048 {on the coil bobbin}

- G04D 1/06 . Supporting devices for clockworks or parts of time-pieces {for automatic assembly [G04D 1/0021](#)}
- G04D 1/063 .. {provided with a pick-up means, e.g. microphone (measuring and control means for comparison with a standard frequency [G04D 7/12](#))}
- G04D 1/066 .. {Packaging and boxes for transport (packaging for small items, packaging for special items [B65D](#))}

- G04D 1/08 . Tools for setting or removing hands {machines therefor **G04D 3/00B14B1**}

- G04D 1/10 . Devices for opening or closing watch bottoms or covers {machines therefor [G04D 3/00](#)}

- G04D 3/00** **Watchmakers` or watch-repairers` machines or tools for working materials** {metal working in general class [B23](#)}

- G04D 3/0002 . {for mechanical working other than with a lathe (lathes for watchmakers [G04D 3/02](#))}
- G04D 3/0005 .. {for parts of driving means}
- G04D 3/0007 ... {for springs (springs in general [B21F](#); mainspring construction [G04B 1/14](#); springs for the regulating mechanism see [G04D 3/0041](#))}
- G04D 3/001 ... {for spring barrels (construction of spring barrels [G04B 1/16](#), [G04B 1/18](#))}
- G04D 3/0012 .. {for parts of the winding-up mechanism, e.g. for winding axles, crowns (construction thereof [G04B 3/00](#), [G04B 5/00](#))}
- G04D 3/0015 .. {for components of the pawl construction, stop clicks, clutches (construction thereof [G04B 11/00](#))}
- G04D 3/0017 .. {for components of gearworks (construction thereof [G04B 13/00](#))}
- G04D 3/002 ... {for gear wheels or gears}
- G04D 3/0023 ... {for axles, sleeves}
- G04D 3/0025 ... {for axletaps, e.g. for grinding or polishing thereof (on a lathe [G04D 3/02](#))}
- G04D 3/0028 .. {for components of the escape mechanism (construction thereof [G04B 15/00](#))}
- G04D 3/003 ... {for levers}
- G04D 3/0033 ... {for lever wheels}
- G04D 3/0035 .. {for components of the regulating mechanism}
- G04D 3/0038 ... {for balances (construction thereof [G04B 17/063](#))}
- G04D 3/0041 ... {for coil-springs (coil-springs in general [B21F](#); springs for the driving mechanism [G04D 3/0007](#))}
- G04D 3/0043 .. {for components of the time-indicating mechanisms (construction thereof [G04B 19/00](#))}
- G04D 3/0046 ... {for hands (construction thereof [G04B 19/00](#))}
- G04D 3/0048 ... {for dials (construction thereof [G04B 19/10](#), [G04B 19/12](#))}

- G04D 3/0051 . . . {for time markers}
- G04D 3/0053 .. {for framework components (construction thereof [G04B 29/00](#))}
- G04D 3/0056 .. {for bearing components (construction thereof [G04B 31/00](#))}
- G04D 3/0058 . . . {for bearing jewels (machines for boring through stones [B28D](#); for diamonds [B24B](#); diamond polishing [B24B 9/16](#); manufacture of drawing stones [B23P 5/00](#); setting of industrial stones [B23P 15/24](#))}
- G04D 3/0061 .. { for components for protecting the mechanism against external influences (construction thereof [G04B 37/00](#), [G04B 43/00](#))}
- G04D 3/0064 . . . {for cases}
- G04D 3/0066 . . . {for the fastening means of the case or bracelet (construction thereof [G04B 37/1486](#))}

- G04D 3/0069 . {for working with non-mechanical means, e.g. chemical, electrochemical, metallising, vapourising; with electron beams, laser beams}
- G04D 3/0071 .. {for bearing components}

- G04D 3/0074 . {for treatment of the material, e.g. surface treatment}
- G04D 3/0076 .. {for components of driving mechanisms, e.g. mainspring}
- G04D 3/0079 .. {for gearwork components}
- G04D 3/0082 . . . {for gear wheels or gears}
- G04D 3/0084 . . . {for axles, sleeves}
- G04D 3/0087 .. {for components of the escapement mechanism, e.g lever escapement, escape wheel}
- G04D 3/0089 .. {for components of the regulating mechanism, e.g. coil springs}
- G04D 3/0092 .. {for components of the time-indicating mechanism, e.g. dials}
- G04D 3/0094 .. {for bearing components}
- G04D 3/0097 .. {for components of the means protecting the mechanism against external influences, e.g. cases}

- G04D 3/02 . Lathes, with one or more supports; Burnishing machines, with one or more supports {metal lathes [B23B](#); automatic lathes [B23B](#); grinding and polishing in general class [B24](#)}
- G04D 3/0209 .. {Components}
- G04D 3/0218 . . . {Jaw-plates, revolving-head nippers}
- G04D 3/0227 .. {for the manufacture of special components for clockworks}
- G04D 3/0236 . . . {for gearwork components}
- G04D 3/0245 {for gear wheels or gears}
- G04D 3/0254 {for axles, sleeves}
- G04D 3/0263 {for axle taps}
- G04D 3/0272 . . . {for components of the time-indicating mechanism, e.g. dials}
- G04D 3/0281 . . . {for bearing components}
- G04D 3/029 . . . {for components of the means protecting the mechanism from external influences, e.g. cases}

- G04D 3/04 . Devices for placing bearing jewels, bearing sleeves, or the like in position {fixing jewels [A44C 17/04](#); tools for assembling and taking apart gear wheels and bearing components [B25B](#); machines for the manufacture of bearing jewels and components

- [G04D 3/0002](#)
- G04D 3/042 .. {for bearing jewels (pressing nippers and hand tools [G04D 1/0042](#))}
- G04D 3/045 .. {for lever, Impulse-pin (adjustment of the escapement [G04D 7/06](#))}
- G04D 3/047 .. {for the coil rolls or bobbins}
- G04D 3/06 . Devices for shaping or setting watch glasses {(cutting watch glasses [C03B 33/04](#); fixing spectacle lenses 42HS2A1; grinding or working of spectacle lenses and lenses B24B; working plastic materials in general B29)}
- G04D 3/062 .. {Shaping without chipping away, e.g. by hot pressing or by punching out the whole piece from a plate}
- G04D 3/065 .. {Shaping by removing material, e.g. cutting out from a plate, milling the edges}
- G04D 3/067 .. {Setting or taking apart, whereby a temporary deformation of the glass may take place}
- G04D 3/08 . Machines or apparatus for cleaning
- G04D 3/083 .. {whereby the components to be cleaned are placed in a container}
- G04D 3/086 ... {whereby the container rotates in a cleaning fluid}
- G04D 5/00** **Oiling devices; Special lubricant containers for watchmakers** {bearings constructed with regard to oiling of the clockwork **G04B 31/00T**; oilcans for lubricating in general [F16N 3/04](#)}
- G04D 5/005 . {Oilcans and other hand tools for lubricating special parts of the clockwork mechanism}
- G04D 7/00** **Measuring, counting, calibrating, testing or regulating apparatus** {measuring devices and calibers in general [G01B](#); counters in general [H03K](#)}
- G04D 7/001 . {Purely mechanical measuring and testing apparatus}
- G04D 7/002 . {Electrical measuring and testing apparatus}
- G04D 7/003 .. {for electric or electronic clocks}
- G04D 7/004 . {Optical measuring and testing apparatus}
- G04D 7/005 . {Counters for small components, e.g. bearing jewels}
- G04D 7/006 . {Testing apparatus for complete clockworks with regard to external influences or general good working}
- G04D 7/007 .. {with regard to the sealing of the case}
- G04D 7/008 .. {with regard to the reaction to shocks}
- G04D 7/009 .. {with regard to the functioning of the automatic winding-up device}
- G04D 7/02 . for mainsprings
- G04D 7/04 . for gearwork, {e.g. optical control of gear wheels; optical control in general [G01B](#), [G01B 9/08](#)}

- G04D 7/06 . for escapements
- G04D 7/08 . for balance wheels
- G04D 7/081 .. {for adjusting the fellow or the shafts (adjustment of the gear wheels [G04D 7/04](#))}
- G04D 7/082 .. {for balancing}
- G04D 7/084 ... {by setting adjustable elements, e.g. balance wheel screws}
- G04D 7/085 ... {by removing material from the balance wheel itself}
- G04D 7/087 {Automatic devices therefor (balancing and loading or removing carried out automatically)}
- G04D 7/088 ... {by loading the balance wheel itself with material}
- G04D 7/10 . for hairsprings {of balances}
- G04D 7/12 . Timing devices for clocks or watches for comparing the rate of the oscillating member with a standard {supporting devices for clocks with built-in recording apparatus [G04D 1/063](#); measuring short time intervals [G04F 10/00](#); frequency measuring in general [H04B](#), [G01R](#)}
- G04D 7/1207 .. {only for measuring}
- G04D 7/1214 ... {for complete clockworks}
- G04D 7/1221 {with recording, e.g. vibrograph}
- G04D 7/1228 {Devices for facilitating the reading or the interpretation of the recording}
- G04D 7/1235 ... {for the control mechanism only (found from outside the clockwork)}
- G04D 7/1242 {for measuring amplitude}
- G04D 7/125 {for measuring frequency}
- G04D 7/1257 .. {wherein further adjustment devices are present}
- G04D 7/1264 ... {for complete clockworks}
- G04D 7/1271 ... {for the control mechanism only (from outside the clockwork)}
- G04D 7/1278 {whereby the adjustment device works on the compass}
- G04D 7/1285 {whereby the adjustment device works on the mainspring}
- G04D 7/1292 {whereby the adjustment device works on the balance wheel}
- G04D 9/00** **Demagnetising devices** (demagnetising in general [H01F 13/00](#))
- G04D 99/00** **Subject matter not provided for in other groups of this subclass**